ANALISIS PENGARUH JARAK TEMBAGA DALAM PENGUKURAN *WATER LEVEL CONTACTLESS* PADA *BEAKER GLASS*

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ABSTRACT

Measuring liquid levels in food and beverages requires high hygiene standards to prevent contamination from metal substances. Liquid measurement tools are essential to ensure the quality of the produced products. This study aims to analyze the effect of copper electrode distance on the accuracy of contactless water level measurement in a 250 ml beaker glass. Measurements were conducted using the FDC1004 sensor, which operates based on capacitance changes as the water level varies. The electrode distance variations tested were 1 cm, 3 cm, and 6 cm. The results indicate that electrode distance significantly affects measurement accuracy. At a 1 cm electrode distance, the Mean Absolute Percentage Error (MAPE) obtained was ± 4%, while at 3 cm and 6 cm, the MAPE values were ± 6% each. These findings suggest that a closer electrode distance provides more accurate measurement results. Therefore, using a 1 cm electrode distance is recommended for practical applications to enhance the accuracy of contactless water level measurement.

***Keywords**: non-contact water measurement, FDC1004 sensor, single-ended measurement, food and beverage industry, capacitance.*